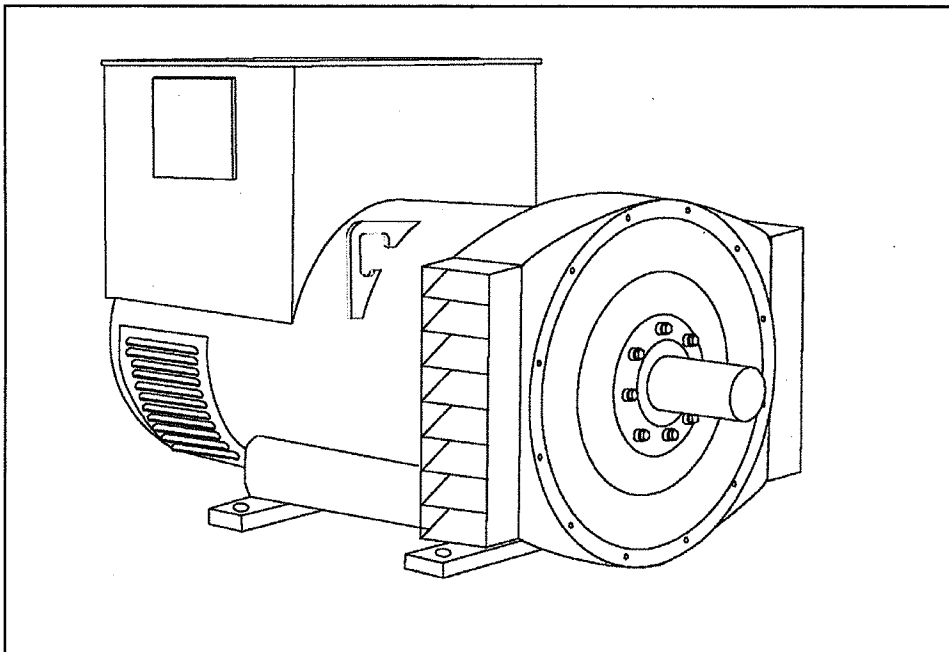


HCM434F - Technical Data Sheet



HCM434F

SPECIFICATIONS & OPTIONS



STANDARDS

Marine generators may be certified to Lloyds, DnV, Bureau Veritas, ABS, Germanischer Lloyd or RINA.

Other standards and certifications can be considered on request.

VOLTAGE REGULATORS

SEE DECS 100

TERMINALS & TERMINAL BOX

Standard generators are 3-phase reconnectable with 12 ends brought out to the terminals, which are mounted on a cover at the non-drive end of the generator. A sheet steel terminal box contains the AVR and provides ample space for the customers' wiring and gland arrangements. It has removable panels for easy access.

SHAFT & KEYS

All generator rotors are dynamically balanced to better than BS6861:Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.

INSULATION/IMPREGNATION

The insulation system is class 'H'.

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

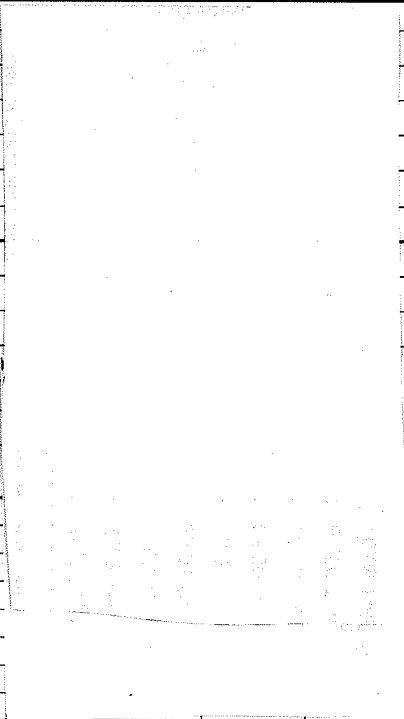
The stated voltage regulation may not be maintained in the presence of certain radio transmitted signals. Any change in performance will fall within the limits of Criteria 'B' of EN 61000-6-2:2001. At no time will the steady-state voltage regulation exceed 2%.

NB Continuous development of our products entitles us to change specification details without notice, therefore they must not be regarded as binding.

Front cover drawing typical of product range.

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WINDING 311

CONTROL SYSTEM		SEPARATELY EXCITED BY P.M.G.	
A.V.R.	MX321	MX341	
VOLTAGE REGULATION	± 0.5 %	± 1.0 %	With 4% ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)		
INSULATION SYSTEM	CLASS H		
PROTECTION	IP23		
RATED POWER FACTOR	0.8		
STATOR WINDING	DOUBLE LAYER LAP		
WINDING PITCH	TWO THIRDS		
WINDING LEADS	12		
STATOR WDG. RESISTANCE	0.0073 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED		
ROTOR WDG. RESISTANCE	1.37 Ohms at 22°C		
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4,VDE 0875G, VDE 0875N. refer to factory for others		
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%		
MAXIMUM OVERSPEED	2250 Rev/Min		
BEARING DRIVE END	BALL. 6317 (ISO)		
BEARING NON-DRIVE END	BALL. 6314 (ISO)		
		2 BEARING	
WEIGHT COMP. GENERATOR		1160 kg	
WEIGHT WOUND STATOR		535 kg	
WEIGHT WOUND ROTOR		440 kg	
WR² INERTIA		5.2304 kgm²	
SHIPPING WEIGHTS in a crate		1220 kg	
PACKING CRATE SIZE		155 x 87 x 107(cm)	
		60 Hz	
TELEPHONE INTERFERENCE		TIF<50	
COOLING AIR		0.580 m³/sec 1240 cfm	
VOLTAGE SERIES STAR		480/277	
VOLTAGE PARALLEL STAR		240/138	
VOLTAGE SERIES DELTA		277/138	
kVA BASE RATING FOR REACTANCE VALUES		425	
Xd DIR. AXIS SYNCHRONOUS		2.31	
X'd DIR. AXIS TRANSIENT		0.13	
X''d DIR. AXIS SUBTRANSIENT		0.09	
Xq QUAD. AXIS REACTANCE		2.04	
X''q QUAD. AXIS SUBTRANSIENT		0.30	
Xl LEAKAGE REACTANCE		0.05	
X2 NEGATIVE SEQUENCE	0.20		
X0 ZERO SEQUENCE	0.07		
REACTANCES ARE SATURATED		VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED	
T'd TRANSIENT TIME CONST.	0.08s		
T''d SUB-TRANSTIME CONST.	0.019s		
T'do O.C. FIELD TIME CONST.	1.7s		
Ta ARMATURE TIME CONST.	0.018s		
SHORT CIRCUIT RATIO	1/Xd		

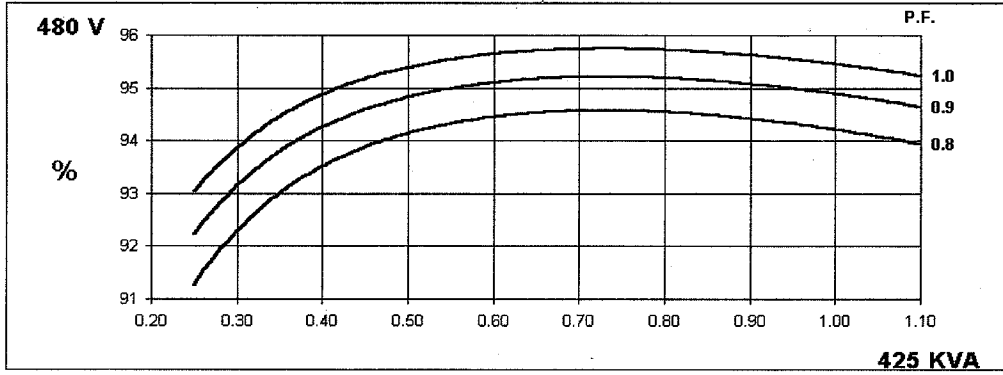


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Winding 311

**60
Hz**

THREE PHASE EFFICIENCY CURVES

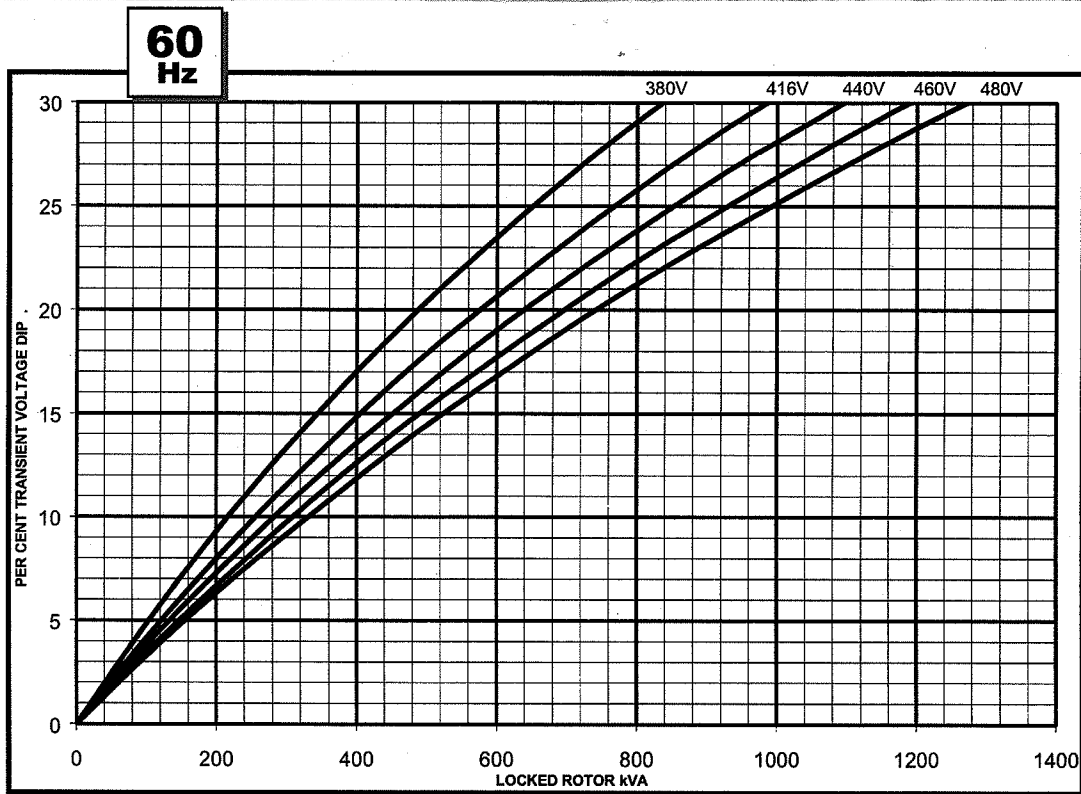


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Winding 311

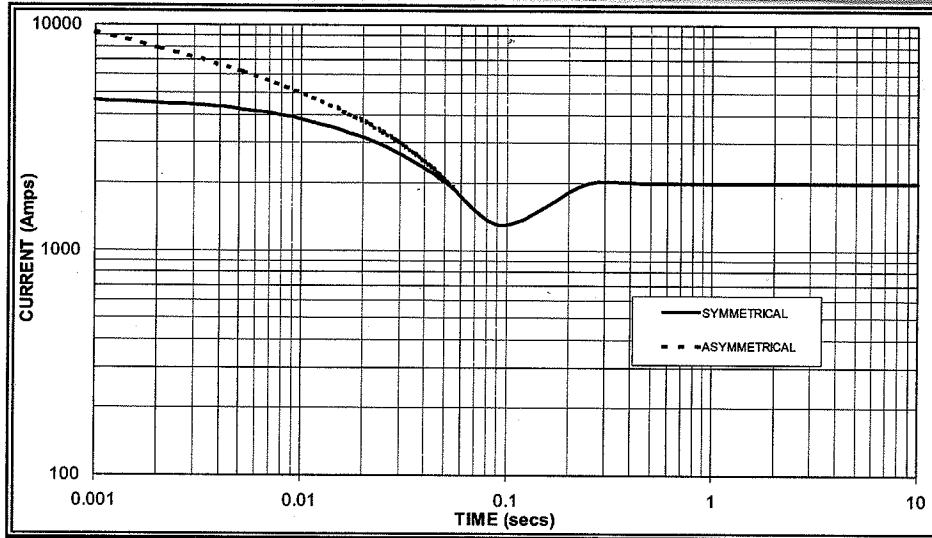


Locked Rotor Motor Starting Curve



**Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed
Based on star (wye) connection.**

**60
Hz**



Sustained Short Circuit = 2,000 Amps

Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

50Hz		60Hz	
Voltage	Factor	Voltage	Factor
380v	X 1.00	416v	X 1.00
400v	X 1.05	440v	X 1.06
415v	X 1.09	460v	X 1.10
440v	X 1.16	480v	X 1.15

The sustained current value is constant irrespective of voltage level

Note 2

The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3-phase	2-phase L-L	1-phase L-N
Instantaneous	x 1.00	x 0.87	x 1.30
Minimum	x 1.00	x 1.80	x 3.20
Sustained	x 1.00	x 1.50	x 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged

Note 3

Curves are drawn for Star (Wye) connected machines. For other connection the following multipliers should be applied to current values as shown :

Parallel Star = Curve current value X 2

Series Delta = Curve current value X 1.732

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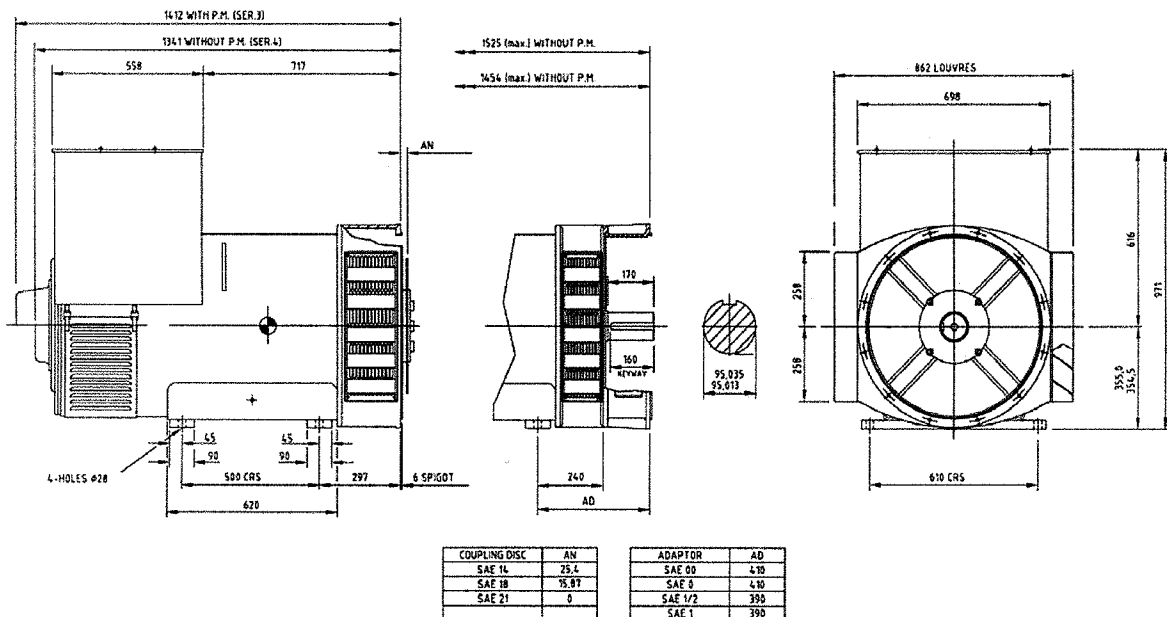
Winding 311 / 0.8 Power Factor



RATINGS

60 Hz	Series Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	Parallel Star (V)	208	220	230	240	208	220	230	240	208	220	230	240	208	220	230	240
	Delta (V)	240	254	266	277	240	254	266	277	240	254	266	277	240	254	266	277
	kVA	305	315	320	330	319	330	335	344	363	375	381	394	394	406	413	425
	kW	244	252	256	264	255	264	268	275	290	300	305	315	315	325	330	340
	Efficiency (%)	94.5	94.5	94.6	94.6	94.4	94.5	94.5	94.5	94.2	94.3	94.4	94.4	93.9	94.1	94.2	94.2
	kW Input	258	267	271	279	270	279	284	291	308	318	323	334	336	345	351	361

DIMENSIONS



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TD_HCM434F.GB_08.02_01_GB